# INTERAGENCY ECOLOGICAL PROGRAM (IEP)
# MANAGEMENT, ANALYSIS AND SYNTHESIS TEAM (MAST)

## December 2012 Progress Report

**Accomplishments, January – October 2012:** See April, June, and October Progress Reports (embedded files)

MASTApril2012Updat e-Final.doc  MASTProgressReport Jun2012.doc  MASTProgressReport Oct2012(Final).doc

**MAST Highlights, November – December 2012:**

- At its December 4-5 off-site meeting, the MAST revised its previously developed delta smelt conceptual models and refined its preliminary answer to the question "**Why did delta smelt do relatively well in 2011?**" as follows:

  *"Each delta smelt life stage and the habitat conditions that affect it are linked across seasons – together, they contribute to the annual success of the species. In 2011, delta smelt likely benefitted from a combination of favorable habitat conditions throughout the year: high winter outflows reduced entrainment risk and increased sediment loading and subsequent turbidity, a cool spring allowed for prolonged spawning, a cool summer with good food resources promoted growth and survival, and turbid and productive fall conditions in the large, westward low salinity zone and in the Cache Slough region provided a large habitat area with suitable conditions for maturation."*

- The MAST also discussed the current and future role and functioning of the MAST and concluded that **a team like the MAST is a critical component of collaborative adaptive management** involving large-scale ecosystem manipulations (example: fall outflow adaptive management/FLaSH). It is also critically important for preparing materials for reviews, identifying knowledge gaps and uncertainties and for planning future scientific work. Current MAST resources allow for detailed work on only one relatively narrow topic (e.g. FLaSH) at a time, at the expense of other important topics (e.g. salmon). Future options include:
  - Continuing the current MAST focused on delta smelt/FLaSH/POD
  - Create new or additional MASTs focusing on different topics (e.g. salmon, sturgeon – may grow out of current PWTs
  - Create more fully supported MAST(s) as integral part(s) of collaborative Adaptive Management Team(s) associated with BiOps, BDCP, etc (long-term recommendation, should also be discussed in context of DSP Delta Science Plan)

**Detailed MAST Accomplishments, November – December 2012:**

*MAST Analysis, Synthesis, and Communication:*

- During this period, MAST activities focused on completing the FLaSH report and preparing a full draft of the MAST report which also included tracking intensive field sampling activities conducted during this quarter (details see below).
- As in previous quarters, all MAST activities, including communications followed the previously established MAST Charter, MAST Communications Plan and MAST RACI (embedded in April 2012 MAST Update).
- MAST members discussed analysis and synthesis progress regularly every month the month during a separate meeting before the IEP Management Team meeting.
- Additional MAST information and data sharing took place via the MAST and FLaSH wiki sites and via e-mail.
- The MAST produced quarterly progress reports as first requested by the IEP Coordinators in March 2012.
- MAST updates and/or related results have been and will be included in the IEP Science Highlights for the IEP Directors.
- The MAST co-chairs have given regular updates to the IEP Coordinators at their monthly meeting.

*Significant MAST and MAST-related Events and Activities during this period:*

- Early November: Study Proponent notification about proposal selection recommendations, outcome of the October 30 IEP Director's meeting, and next steps including preparation of study summaries with relevance statements, work with assigned MAST point persons to address reviewer concerns, stimulate collaboration among investigators, and prepare contracting process.
- Early December: Received and compiled summaries of recommended new studies.
- December 4-5: MAST Local Offsite Meeting to work on FLaSH and MAST reports (see details below)

**Next steps, January – March 2013:**

- Postponed TBD (was October 19): IEP Stakeholder Group meeting - update on study solicitation process, draft 2013 work plan, MAST process and products.
- January: Complete final draft FLaSH report for review by USGS, BOR, FWS, and IEP Coordinators and start USGS publication process (*MAST Deliverable*).
- March IEP Directors meeting: Present completed draft FLaSH report for approval and discuss future of the MAST
- March: Complete draft MAST report for Coordinators review (*MAST Deliverable*).
- June: Completed MAST report to the IEP Directors for approval.

## MAST Local Off-site Meeting, Clarksburg, Dec. 4-5, 2012

**MAST Participants in Off-site Meeting (17):**

DWR: Ted Sommer, Louise Conrad, Karen Gehrts
CVRWQB: Stephanie Fong
DFG: Randy Baxter, Steve Slater, Kelly Souza, Gregg Erickson
DSC: Anke Mueller-Solger
FWS: Steve Culberson, Joe Kirsch, Matt Dekar, Gonzalo Castillo
Reclamation: Lenny Grimaldo, Fred Feyrer
USGS: Larry Brown
US EPA: Bruce Herbold

**Daily MAST Off-site Topics:**

- Tuesday, 12/4, FlaSH report and next steps
- Tuesday, 12/4, 1:00-4:30: MAST conceptual models and assessment matrix
- Wednesday, 12/5, 9:30-noon: MAST report outline and assignments
- Wednesday, 12/5, 1:00-4:30: MAST report wrap-up and MAST future

**MAST Off-site Goals and Objectives:**

1. FLaSH report and next steps
    - Go over draft report reviewer comments
    - Is there any new information we should consider/incorporate into the current report, e.g. from the Delta Science Conference FLaSH session (oral & posters)?
    - Fall 2012: what's happened this year (X2, delta smelt, habitat)? What does this mean for FLaSH?
    - Revise FLaSH conceptual model as per reviewer comments and new findings
    - Clarify and assign tasks for final steps leading to FLaSH report publication.
    - Discuss what's next with the FLaSH

2. MAST report
    - Revisit/revise approach (4 seasons, 4 years, one fish?)
    - Revisit/revise conceptual models and assessment matrix
    - Produce annotated MAST report outline with assignments for additional data analyses, if needed, and for writing report chapters.
    - Determine when the report can and should be completed (final draft in early March?)

3. MAST Future
    - Revisit 2011 MAST proposal, project charter, communications plan and a responsibility assignment matrix
    - Produce recommendation for the IEP Coordinators & Directors about what's next with and for the MAST. This would be presented to the IEP Directors at their March 2013 meeting.

**MAST Off-site Outcomes/Products:**

- Discussed current MAST approach and MAST future
    - Value of the MAST approach - As shown by the Fall Outflow Adaptive Management (FLaSH) experience, **a team like the MAST is a critical component of collaborative adaptive management**. Only a multidisciplinary, collaborative team such as the MAST has the expertise to plan and implement the complex studies associated with such adaptive management plans and to deliver timely and relevant analysis and synthesis reports to adaptive managers and decision makers. Finally, a team like the MAST or previously the POD management team is also critically important for identifying knowledge gaps and uncertainties and for planning future scientific work.
    - Limitations of the MAST - It is important to note that current MAST resources only (and barley!) allow for detailed work on one relatively narrow topic (e.g. FLaSH) at a time, at the expense of other important topics (e.g. salmon). The membership of the current MAST also has more expertise on pelagic fishes and food webs than on other topics.
    - Options for the future of the MAST may include:
        1. Continuing the current MAST with focus on delta smelt/FLaSH/POD.
        2. Create new or additional MASTs focusing on different topics (e.g. salmon, sturgeon – may grow out of current PWTs
        3. Create a more fully supported Analysis and Synthesis team as integral parts of collaborative Adaptive Management Team(s) associated with BiOps, BDCP, etc (long-term recommendation, should also be discussed in context of DSP Delta Science Plan)
- Revised conceptual models for FLaSH and MAST reports and refined the preliminary conclusion about delta smelt responses in 2011:

    *"Each delta smelt life stage and the habitat conditions that affect it are linked across seasons – together, they contribute to the annual success of the species. Throughout 2011, delta smelt likely benefitted from a combination of favorable habitat conditions: high 2010-11 winter outflows reduced entrainment risk and increased sediment loading and subsequent turbidity, a cool*

*spring allowed for prolonged spawning, a cool summer with good food resources promoted growth and survival, and turbid and productive fall conditions in the large, westward low salinity zone and in the Cache Slough region provided a large habitat area with suitable conditions for maturation."*

- Revised FLaSH report content for report to be published in USGS Scientific Investigation Series. Final draft report should be completed by early January 2013 for review by USGS, BOR, FWS, and IEP Coordinators in January, presentation to IEP Directors in March, and final USGS publication later in 2013 (unclear how long this last step will take)
- Produced annotated MAST report table of contents with draft chapter outlines and writing assignments. The main chapters are driven by questions and hypotheses derived from the conceptual models. The MAST report will also include an "assessment matrix" summarizing findings about habitat conditions and delta smelt responses.
- As in the three preceding quarters, the MAST has also produced an additional product, the quarterly MAST progress report. These reports are written by the MAST co-chairs and reviewed by the MAST. They are intended as written updates for the IEP Coordinators, Directors, Stakeholders, and possibly others. The MAST has now produced four quarterly progress reports (the first three are embedded above).